

In the Specification

attached
Please substitute the ~~following~~ Sequence Listing on a separate page for the one submitted on July 10, 2001 to be inserted immediately after page 36. *Ch*
12/14/2002

Additionally, please make the following amendments prior to examination on the merits:

Page 6, after line 15, insert -- DETAILED DESCRIPTION --;

Please rewrite paragraph 3 beginning on page 6 as follows:

SEQ. ID NO:1 is a whole nucleotide sequence of human hepatitis B virus, isolated from an eleven year old child born to a mother in Singapore with the wild type virus. The child had received standard Hepatitis B immunoglobulin (HBIG) and HB vaccine and was infected with the mutated strain one year later. This strain carries a mutation at amino acid residue 145 (glycine to arginine) of the major surface antigen (SEQ. I.D. No. 1). The mutation is shown at nucleic acids numbered 587-589.

Please rewrite paragraph 4 beginning on page 6 as follows:

SEQ ID NO:2 is the deduced amino acid sequence of the DNA polymerase from the nucleotide sequence of SEQ ID NO:1.

Please rewrite paragraph 4 beginning on page 6 as follows:

SEQ ID NO:3 is the deduced amino acid sequence of the large surface antigen from the nucleotide sequence of SEQ ID NO:1. The mutated amino acid residue (G to R) is numbered 319.

Please rewrite paragraph 1 beginning on page 7 as follows:

SEQ ID NO:4 is the deduced amino acid sequence of the core protein from the nucleotide sequence of SEQ ID NO:1.

Please rewrite paragraph 2 beginning on page 7 as follows:

SEQ ID NO:5 is the deduced amino acid sequence of the trans-activating X protein from the nucleotide sequence of SEQ ID NO:1.

Please rewrite paragraph 3 beginning on page 7 as follows:

SEQ ID NO:6 is the oligonucleotide sequence corresponding to the initiation site of the coding region of DNA polymerase, at position 2307 of the viral genome and matches the coding strand (sense oligonucleotide).

Please rewrite paragraph 4 beginning on page 7 as follows:

SEQ ID NO:7 is the oligonucleotide sequence corresponding to position 250 of the viral nucleotide sequence and matches the complementary strand (anti-sense oligonucleotide).

Please rewrite paragraph 5 beginning on page 7 as follows:

SEQ ID NO:8 is the oligonucleotide sequence corresponding to position 250 of the viral nucleotide sequence and matches the coding strand (sense oligonucleotide).

Please rewrite paragraph 6 beginning on page 7 as follows:

SEQ ID NO:9 is the oligonucleotide sequence corresponding to the stop codon of the coding region of DNA polymerase, at position 1623 of the viral genome and matches the complementary strand (anti-sense oligonucleotide).

Please rewrite paragraph 7 beginning on page 7 as follows:

SEQ ID NO:10 is the oligonucleotide sequence corresponding to position 1420 of the viral genome and matches the coding strand (sense oligonucleotide).

Please rewrite paragraph 8 beginning on page 7 as follows:

SEQ ID NO:11 is the oligonucleotide sequence corresponding to position 2340 of the viral genome and matches the complementary strand (anti-sense oligonucleotide).

Please delete on page 9 subheading "DETAILED DESCRIPTION OF THE INVENTION".

Please rewrite paragraph 2 beginning on page 9 as follows:

The present invention provides the nucleotide sequence of a hepatitis B virus genome, which carries a vaccine-induced mutation at amino acid residue 145 (Glycine to Arginine) of the major surface antigen, consisting of 3215 nucleotides (SEQ ID NO:1) coding for 4 overlapping viral proteins.

Please rewrite paragraph 6 beginning on page 29 as follows:

From the analysis described above, the full-length nucleotide sequence of the hepatitis B virus carrying a vaccine-induced mutation at amino acid residue 145 (Glycine to Arginine) of the major surface antigen was determined as shown in SEQ ID NO:1.

Please rewrite paragraph 1 beginning on page 30 as follows:

The deduced amino acid sequences coding for the major viral proteins are shown in Figures 4-7: hepatitis B viral DNA polymerase (SEQ ID NO:2), the large surface antigen (SEQ ID NO:3), the core protein (SEQ ID NO:4) and the trans-activating X protein (SEQ ID NO:5).